

**WHAT IS CLAIMED IS:**

1           1. A microarray comprising a support having a plurality of discrete  
2 regions having a biopolymer spotted thereon, wherein attached to said biopolymer in each of  
3 said regions is a ligand that can be the same or different from a ligand in any other of said  
4 discrete regions, and wherein the concentration of said ligand in said discrete regions is  
5 substantially normalized.

1           2. The microarray of claim 1, wherein said support is selected from the  
2 group consisting of glass, polystyrene, PDVF membranes, nylon membranes, and  
3 polycarbonate slides.

1           3. The microarray of claim 1, wherein said biopolymer is a member  
2 selected from the group consisting of oligosaccharides, proteins, polyketides, peptoids,  
3 hydrogels, polylactates and polyurethanes.

1           4. The microarray of claim 1, wherein said biopolymer is attached to said  
2 support via noncovalent interactions.

1           5. The microarray of claim 4, wherein said noncovalent interactions are  
2 selected from the group consisting of hydrogen bonding, van der Waals interactions,  
3 hydrophobic interactions, hydrophilic interactions and combinations thereof.

1           6. The microarray of claim 1, wherein said biopolymer is attached to said  
2 support via covalent interactions.

1           7. The microarray of claim 1, wherein said ligand is selected from the  
2 group consisting of amino acids, peptides, proteins, sugars, lipids, nucleic acids, small  
3 organic compounds, pharmaceutical agents, candidate pharmaceutical agents, natural or  
4 synthetic antigens, and combinations thereof.

1           8. The microarray of claim 1, wherein said ligand is attached to said  
2 biopolymer via chemoselective ligation.

1           9. The microarray of claim 1, wherein said biopolymer is agarose, and  
2 said support is glass.

1                   **10.**       The microarray of claim 1, wherein said biopolymer is human serum  
2 albumin, and said support is polystyrene.

1                   **11.**       The microarray of claim 1, wherein the difference in concentration  
2 between any two discrete regions is less than 50%.

1                   **12.**       The microarray of claim 1, wherein the difference in concentration  
2 between any two discrete regions is less than 20%.

1                   **13.**       The microarray of claim 1, wherein the difference in concentration  
2 between any two discrete regions is less than 5%.

1                   **14.**       A method of producing a concentration-normalized ligand array, said  
2 method comprising:

3                   (a) forming a ligand-modified biopolymer by attaching a ligand to a  
4 functionalized biopolymer via chemoselective ligation; and  
5                   (b) spotting an aliquot of said modified biopolymer mixture onto each of a  
6 plurality of discrete regions on a solid support to produce a concentration-normalized ligand  
7 array.

1                   **15.**       The method of claim 14, wherein said method further comprises, prior  
2 to step (b), the following step:

3                   (a)(i) combining said ligand-modified biopolymer with a biopolymer solution  
4 to form a modified biopolymer mixture.

1                   **16.**       The method of claim 14, wherein said solid support is selected from  
2 the group consisting of glass, polystyrene, PDVF membranes, nylon membranes, and  
3 polycarbonate slides.

1                   **17.**       The method of claim 14, wherein said aliquot is spotted onto said solid  
2 support under conditions sufficient to form a gel-coated surface.

1                   **18.**       The method of claim 14, wherein said biopolymer is a member  
2 selected from the group consisting of oligosaccharides, proteins, polyketides, peptoids,  
3 hydrogels, polylactates and polyurethanes.

1                   19. The method of claim 14, wherein said ligand is selected from the group  
2 consisting of amino acids, peptides, proteins, sugars, lipids, nucleic acids, small organic  
3 compounds, pharmaceutical agents, candidate pharmaceutical agents and combinations  
4 thereof.

**20.** The method of claim 14, wherein said ligand-modified biopolymer is peptide-modified agarose and said solid support is glass.

**21.** The method of claim 14, wherein said ligand-modified biopolymer is peptide-modified human serum albumin and said solid support is polystyrene.

1                   **22.** A method for promoting cell or tissue growth at a desired site, said  
2 method comprising contacting said site with a ligand-modified biopolymer in an amount  
3 effective to promote cellular chemotaxis and cell or tissue growth at said site, wherein said  
4 biopolymer component is a member selected from the group consisting of agarose, polylysine  
5 and polyacrylamide, wherein said ligand component is a chemotactic peptide specific for a  
6 cell surface receptor, and wherein said ligand component is attached to said biopolymer  
7 component via chemoselective ligation.

1                   23. The method of claim 22, wherein said biopolymer is agarose.

1                   **24.**       The method of claim **22**, wherein said site is a member selected from  
2   the group consisting of a stent, a graft, an organ, a tissue and an implant.

1                           **25.** The method of claim 22, wherein said cell or tissue growth occurs  
2     *in vivo*.

1                           **26.**     The method of claim 22, wherein said cell or tissue growth occurs  
2     *in vitro*.

1                   **27.** A method for assaying the binding of ligands to a binding partner, said  
2 method comprising

3 (a) contacting a binding partner with a microarray of claim 1; and

(b) determining the amount of binding that occurs between said binding partner and the ligands present in the discrete regions of said microarray.

1                   **28.**     The method of claim **27**, wherein said microarray comprises a  
2 modified agarose biopolymer.